

## FCC Test Report

**Report No.:** RF151017C01B-1

**FCC ID:** H8N-WLU5330

**Test Model:** WLU5330-D81

**Received Date:** Oct. 30, 2015

**Test Date:** Nov. 06 ~ Dec. 15, 2015

**Issued Date:** Dec. 22, 2015

**Applicant:** ASKEY COMPUTER CORP.

**Address:** 6-10F, No.119, Jiankang Rd., Zhonghe Dist., New Taipei City, Taiwan

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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### Release Control Record

Issue No.	Description	Date Issued
RF151017C01B-1	Original release	Dec. 22, 2015



# 1 Certificate of Conformity

**Product:** Wireless Module  
**Brand:** Panasonic  
**Test Model:** WLU5330-D81  
**Sample Status:** Engineering sample  
**Applicant:** ASKEY COMPUTER CORP.  
**Test Date:** Nov. 06 ~ Dec. 15, 2015  
**Standards:** 47 CFR FCC Part 15, Subpart E (Section 15.407)  
ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :**  , **Date:** Dec. 22, 2015  
Pettie Chen / Senior Specialist

**Approved by :**  , **Date:** Dec. 22, 2015  
Ken Liu / Senior Manager

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -9.54dB at 0.52927MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.2dB at 5470.00MHz.
15.407(a)(1/2 /3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
15.407(a)(1/2 /3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.63 dB
	200MHz ~ 1000MHz	3.64 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	Wireless Module
Brand	Panasonic
Test Model	WLU5330-D81
Status of EUT	Engineering sample
Power Supply Rating	5Vdc from host equipment
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps 802.11ac: up to 867.0Mbps
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz & 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 5 for 802.11n (HT40), 802.11ac (VHT40) 2 for 802.11ac (VHT80) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)
Output Power	5180 ~ 5240MHz: 200.738mW 5260 ~ 5320MHz: 194.605mW 5500 ~ 5700MHz: 183.049mW 5745 ~ 5825MHz: 148.828mW
Antenna Type	Printed antenna with 2.97dBi gain
Antenna Connector	N/A
Accessory Device	N/A
Data Cable Supplied	N/A

**Note:**

1. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function
802.11a	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT20)	2TX
802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX

\* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for VHT20 / VHT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

### 3.2 Description of Test Modes

#### FOR 5180 ~ 5240MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

#### FOR 5260 ~ 5320MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290 MHz



**FOR 5500 ~ 5700MHz:**

11 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

5 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530MHz	122	5610 MHz

**FOR 5745 ~ 5825MHz:**

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

### 3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz & Bandedge Measurement  
**RE<1G**: Radiated Emission below 1GHz  
**PLC**: Power Line Conducted Emission  
**APCM**: Antenna Port Conducted Measurement

**NOTE:** 1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.  
 2. "-" means no effect.

#### Radiated Emission Test (Above 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	802.11ac (VHT80)		106	106	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

#### Radiated Emission Test (Below 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (HT20)	5180-5240	36 to 48	48	OFDM	BPSK	6.5
	802.11n (HT20)	5260-5320	52 to 64		OFDM	BPSK	6.5
	802.11n (HT20)	5500-5700	100 to 140		OFDM	BPSK	6.5
	802.11n (HT20)	5745-5825	149 to 165		OFDM	BPSK	6.5

**Power Line Conducted Emission Test:**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (HT20)	5180-5240	36 to 48	48	OFDM	BPSK	6.5
	802.11n (HT20)	5260-5320	52 to 64		OFDM	BPSK	6.5
	802.11n (HT20)	5500-5700	100 to 140		OFDM	BPSK	6.5
	802.11n (HT20)	5745-5825	149 to 165		OFDM	BPSK	6.5

**Antenna Port Conducted Measurement:**

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	802.11ac (VHT80)		106	106	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

**Test Condition:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE <sub>≥</sub> 1G	25deg. C, 65%RH	120Vac, 60Hz	Bayu Chen
RE <sub>&lt;</sub> 1G	25deg. C, 65%RH	120Vac, 60Hz	Bayu Chen
PLC	25deg. C, 60%RH	120Vac, 60Hz	Tank Wu
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

### 3.3 Duty Cycle of Test Signal

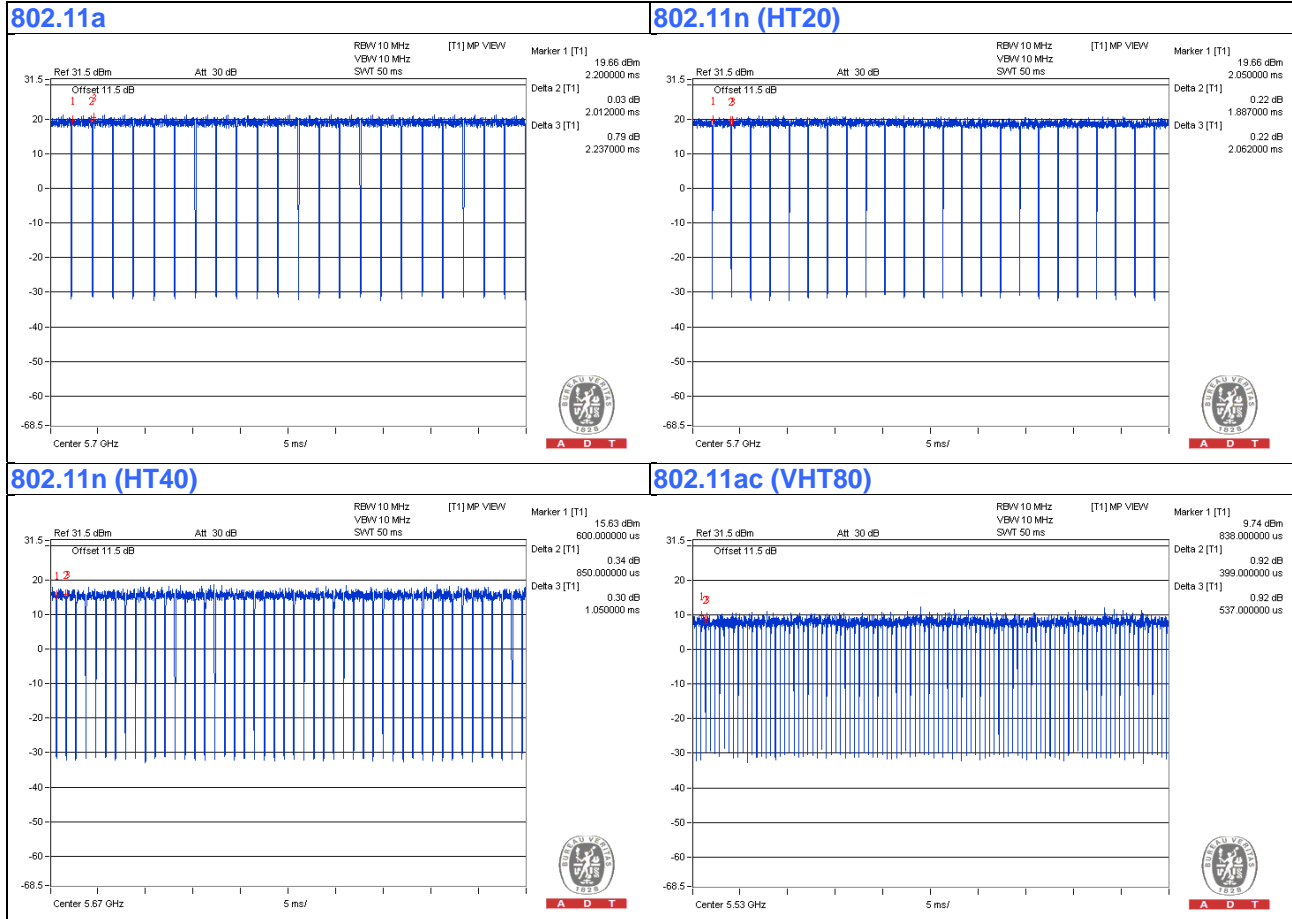
Duty cycle of test signal is < 98 %, duty factor is required

**802.11a:** Duty cycle =  $2.012/2.237 = 0.899$ , Duty factor =  $10 * \log(1/0.899) = 0.46$

**802.11n (HT20):** Duty cycle =  $1.887/2.062 = 0.915$ , Duty factor =  $10 * \log(1/0.915) = 0.39$

**802.11n (HT40):** Duty cycle =  $0.85/1.05 = 0.81$ , Duty factor =  $10 * \log(1/0.81) = 0.92$

**802.11ac (VHT80):** Duty cycle =  $0.85/1.05 = 0.81$ , Duty factor =  $10 * \log(1/0.81) = 0.92$



### 3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5420	33MKMQ1	FCC DoC Approved	-

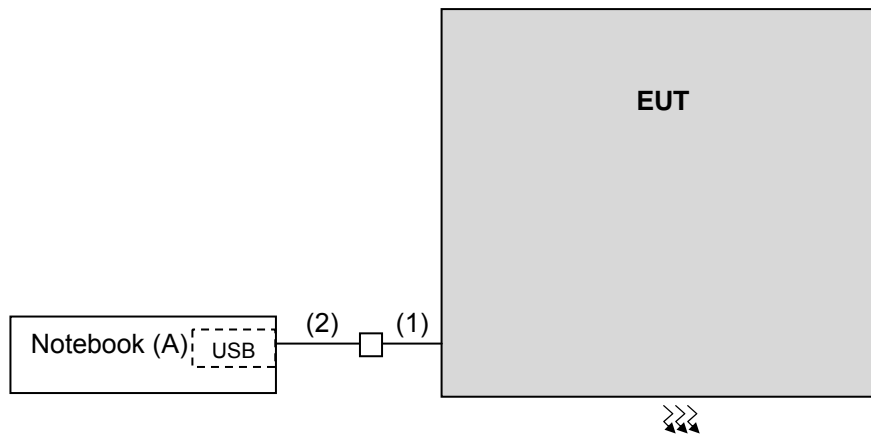
Note:

- All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	0.1	N	0	Provided by manufacturer
2.	USB cable	1	1	Y	0	-

Note: The core(s) is(are) originally attached to the cable(s).

#### 3.4.1 Configuration of System under Test



### 3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart E (15.407)**

**789033 D02 General UNII Test Procedures New Rules v01**

**662911 D01 Multiple Transmitter Output v02r01**

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

## 4 Test Types and Results

### 4.1 Radiated Emission and Bandedge Measurement

#### 4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

#### LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK:74 (dBuV/m)	AV:54 (dBuV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) <sup>*1</sup> PK:-17 (dBm/MHz) <sup>*2</sup>	PK: 68.2(dBuV/m) <sup>*1</sup> PK:78.2 (dBuV/m) <sup>*2</sup>

**NOTE:** <sup>\*1</sup> beyond 10MHz of the band edge <sup>\*2</sup> within 10 MHz of band edge

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).$$

#### 4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 12, 2015	Oct. 11, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Mar. 30, 2015	Mar. 29, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-148	Feb. 02, 2015	Feb. 01, 2016
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Feb. 09, 2015	Feb. 08, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 09, 2015	Feb. 08, 2016
Preamplifier Agilent	8449B	3008A01911	Aug. 09, 2015	Aug. 08, 2016
Preamplifier Agilent	8447D	2944A10638	Aug. 09, 2015	Aug. 08, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-02(30 9222 +248780)	Aug. 09, 2015	Aug. 08, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-03(27 4092)	Aug. 09, 2015	Aug. 08, 2016
RF signal cable Woken	8D-FB	Cable-CH9-01	Aug. 11, 2015	Aug. 10, 2016
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2015	Oct. 17, 2016
High Speed Peak Power Meter	ML2495A	0824011	Jul. 09, 2015	Jul. 08, 2016
Power Sensor	MA2411B	0738171	Jul. 09, 2015	Jul. 08, 2016

- Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The test was performed in HwaYa Chamber 9.
  3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  4. The FCC Site Registration No. is 215374.
  5. The IC Site Registration No. is IC 7450F-9.

#### 4.1.3 Test Procedures

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

**Note:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ( $10 \log(1/\text{duty cycle})$ ).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

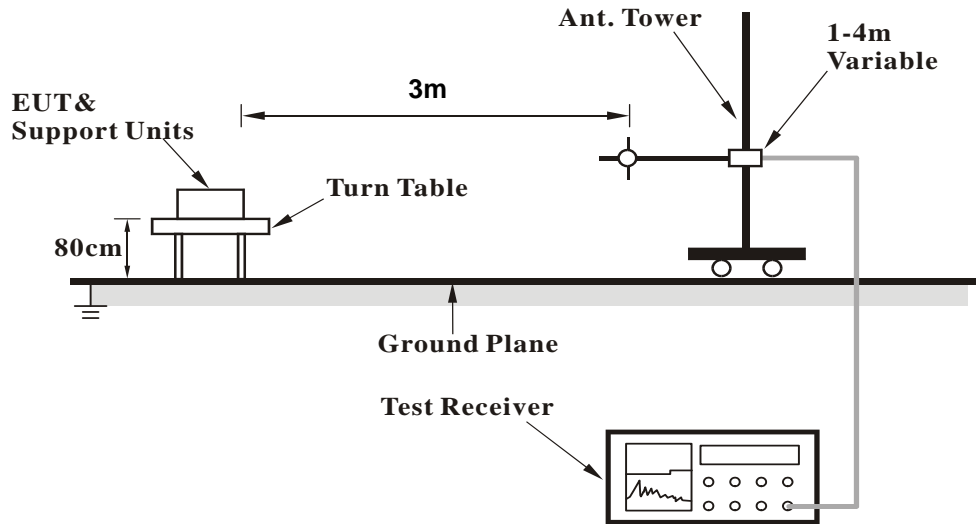
#### 4.1.4 Deviation from Test Standard

No deviation.

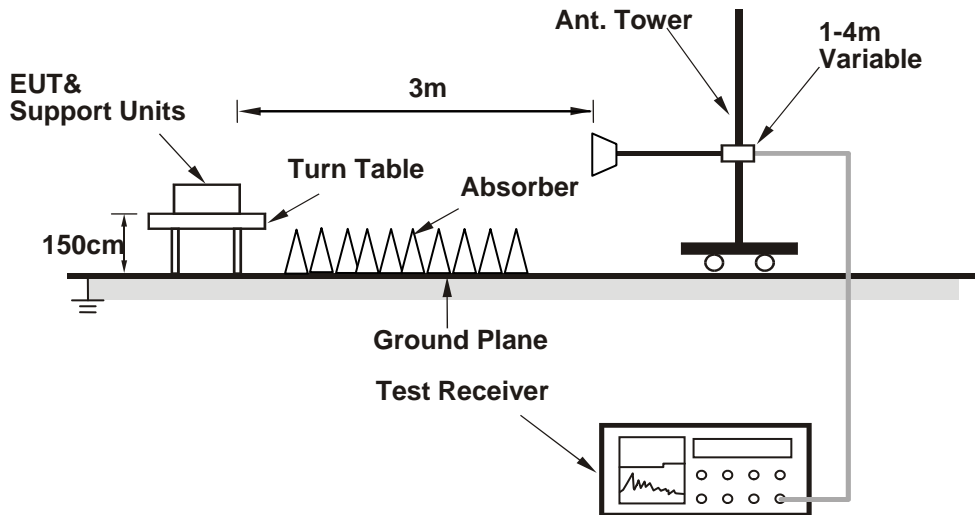


#### 4.1.5 Test Set Up

<Frequency Range 30MHz ~ 1GHz>



<Frequency Range above 1GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo)

#### 4.1.6 EUT Operating Conditions

- Connected the EUT with notebook via a USB cable and placed them on the testing table.
- The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the system in full functions.

#### 4.1.7 Test Results

Above 1GHz data:

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.1 PK	74.0	-5.9	1.54 H	43	64.20	3.90
2	5150.00	52.7 AV	54.0	-1.3	1.54 H	43	48.80	3.90
3	*5180.00	114.1 PK			1.48 H	154	72.60	41.50
4	*5180.00	104.1 AV			1.48 H	154	62.60	41.50
5	#10360.00	62.6 PK	74.0	-11.4	1.77 H	194	47.30	15.30
6	#10360.00	49.5 AV	54.0	-4.5	1.77 H	194	34.20	15.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.7 PK	74.0	-8.3	1.15 V	245	61.80	3.90
2	5150.00	50.1 AV	54.0	-3.9	1.15 V	245	46.20	3.90
3	*5180.00	109.2 PK			1.00 V	266	67.70	41.50
4	*5180.00	99.5 AV			1.00 V	266	58.00	41.50
5	#10360.00	61.1 PK	74.0	-12.9	1.52 V	342	45.80	15.30
6	#10360.00	47.5 AV	54.0	-6.5	1.52 V	342	32.20	15.30

#### REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	112.6 PK			1.49 H	172	71.10	41.50
2	*5200.00	102.5 AV			1.49 H	172	61.00	41.50
3	#10400.00	62.6 PK	74.0	-11.4	1.50 H	185	47.10	15.50
4	#10400.00	49.3 AV	54.0	-4.7	1.50 H	185	33.80	15.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	109.2 PK			1.10 V	267	67.70	41.50
2	*5200.00	99.4 AV			1.10 V	267	57.90	41.50
3	#10400.00	60.9 PK	74.0	-13.1	1.46 V	332	45.40	15.50
4	#10400.00	47.5 AV	54.0	-6.5	1.46 V	332	32.00	15.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	112.0 PK			1.27 H	173	70.40	41.60
2	*5240.00	102.3 AV			1.27 H	173	60.70	41.60
3	5350.00	60.5 PK	74.0	-13.5	1.10 H	168	56.50	4.00
4	5350.00	47.3 AV	54.0	-6.7	1.10 H	168	43.30	4.00
5	#10480.00	62.9 PK	74.0	-11.1	1.24 H	207	47.10	15.80
6	#10480.00	50.5 AV	54.0	-3.5	1.24 H	207	34.70	15.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.8 PK			1.10 V	236	66.20	41.60
2	*5240.00	97.9 AV			1.10 V	236	56.30	41.60
3	5350.00	59.1 PK	74.0	-14.9	1.00 V	265	55.10	4.00
4	5350.00	46.4 AV	54.0	-7.6	1.00 V	265	42.40	4.00
5	#10480.00	60.8 PK	74.0	-13.2	1.00 V	156	45.00	15.80
6	#10480.00	48.2 AV	54.0	-5.8	1.00 V	156	32.40	15.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	112.9 PK			1.24 H	173	71.30	41.60
2	*5260.00	103.3 AV			1.24 H	173	61.70	41.60
3	5350.00	60.3 PK	74.0	-13.7	1.22 H	188	56.30	4.00
4	5350.00	47.6 AV	54.0	-6.4	1.22 H	188	43.60	4.00
5	#10520.00	64.3 PK	74.0	-9.7	1.22 H	201	48.60	15.70
6	#10520.00	50.2 AV	54.0	-3.8	1.22 H	201	34.50	15.70

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	108.1 PK			1.00 V	264	66.50	41.60
2	*5260.00	98.3 AV			1.00 V	264	56.70	41.60
3	5350.00	59.7 PK	74.0	-14.3	1.00 V	295	55.70	4.00
4	5350.00	47.3 AV	54.0	-6.7	1.00 V	295	43.30	4.00
5	#10520.00	61.4 PK	74.0	-12.6	1.28 V	200	45.70	15.70
6	#10520.00	47.7 AV	54.0	-6.3	1.28 V	200	32.00	15.70

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.6 PK			1.00 H	171	68.90	41.70
2	*5300.00	100.8 AV			1.00 H	171	59.10	41.70
3	10600.00	62.9 PK	74.0	-11.1	1.00 H	186	47.10	15.80
4	10600.00	50.5 AV	54.0	-3.5	1.00 H	186	34.70	15.80

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.4 PK			1.20 V	235	63.70	41.70
2	*5300.00	95.7 AV			1.20 V	235	54.00	41.70
3	10600.00	60.8 PK	74.0	-13.2	1.47 V	185	45.00	15.80
4	10600.00	48.2 AV	54.0	-5.8	1.47 V	185	32.40	15.80

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.9 PK			1.04 H	169	69.20	41.70
2	*5320.00	101.5 AV			1.04 H	169	59.80	41.70
3	5350.00	66.6 PK	74.0	-7.4	1.00 H	169	62.60	4.00
4	5350.00	52.5 AV	54.0	-1.5	1.00 H	169	48.50	4.00
5	10640.00	64.1 PK	74.0	-9.9	1.00 H	196	48.30	15.80
6	10640.00	50.6 AV	54.0	-3.4	1.00 H	196	34.80	15.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.0 PK			1.22 V	248	64.30	41.70
2	*5320.00	96.4 AV			1.22 V	248	54.70	41.70
3	5350.00	61.6 PK	74.0	-12.4	1.38 V	199	57.60	4.00
4	5350.00	48.7 AV	54.0	-5.3	1.38 V	199	44.70	4.00
5	10640.00	61.4 PK	74.0	-12.6	1.26 V	224	45.60	15.80
6	10640.00	48.2 AV	54.0	-5.8	1.26 V	224	32.40	15.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.4 PK	74.0	-12.6	1.00 H	167	57.50	3.90
2	5460.00	48.8 AV	54.0	-5.2	1.00 H	167	44.90	3.90
3	#5470.00	69.7 PK	74.0	-4.3	1.39 H	169	65.80	3.90
4	#5470.00	52.6 AV	54.0	-1.4	1.39 H	169	48.70	3.90
5	*5500.00	111.3 PK			1.40 H	44	69.70	41.60
6	*5500.00	101.4 AV			1.40 H	44	59.80	41.60
7	11000.00	62.3 PK	74.0	-11.7	1.50 H	177	45.10	17.20
8	11000.00	49.1 AV	54.0	-4.9	1.50 H	177	31.90	17.20

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.2 PK	74.0	-11.8	1.00 V	249	58.30	3.90
2	5460.00	49.1 AV	54.0	-4.9	1.00 V	249	45.20	3.90
3	#5470.00	70.7 PK	74.0	-3.3	1.00 V	294	66.80	3.90
4	#5470.00	53.0 AV	54.0	-1.0	1.00 V	294	49.10	3.90
5	*5500.00	112.0 PK			1.16 V	299	70.40	41.60
6	*5500.00	102.3 AV			1.16 V	299	60.70	41.60
7	11000.00	59.8 PK	74.0	-14.2	1.00 V	125	42.60	17.20
8	11000.00	47.7 AV	54.0	-6.3	1.00 V	125	30.50	17.20

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.





CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	111.4 PK			1.02 H	168	69.60	41.80
2	*5580.00	101.5 AV			1.02 H	168	59.70	41.80
3	11160.00	62.0 PK	74.0	-12.0	1.29 H	172	46.10	15.90
4	11160.00	49.1 AV	54.0	-4.9	1.29 H	172	33.20	15.90

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	113.2 PK			1.03 V	276	71.40	41.80
2	*5580.00	103.3 AV			1.03 V	276	61.50	41.80
3	11160.00	60.4 PK	74.0	-13.6	1.86 V	180	44.50	15.90
4	11160.00	47.0 AV	54.0	-7.0	1.86 V	180	31.10	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.8 PK			1.64 H	166	66.70	42.10
2	*5700.00	98.9 AV			1.64 H	166	56.80	42.10
3	#5725.00	71.0 PK	74.0	-3.0	1.77 H	45	66.60	4.40
4	#5725.00	53.0 AV	54.0	-1.0	1.77 H	45	48.60	4.40
5	11400.00	61.9 PK	74.0	-12.1	1.57 H	176	45.40	16.50
6	11400.00	48.3 AV	54.0	-5.7	1.57 H	176	31.80	16.50

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.4 PK			1.35 V	285	66.30	42.10
2	*5700.00	98.5 AV			1.35 V	285	56.40	42.10
3	#5725.00	70.9 PK	74.0	-3.1	1.21 V	302	66.50	4.40
4	#5725.00	52.7 AV	54.0	-1.3	1.21 V	302	48.30	4.40
5	11400.00	61.1 PK	74.0	-12.9	1.69 V	177	44.60	16.50
6	11400.00	47.6 AV	54.0	-6.4	1.69 V	177	31.10	16.50

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	70.5 PK	74.0	-3.5	1.25 H	167	66.10	4.40
2	#5714.90	52.6 AV	54.0	-1.4	1.25 H	167	48.20	4.40
3	#5722.90	73.9 PK	78.2	-4.3	1.27 H	167	69.50	4.40
4	#5725.00	62.0 PK	78.2	-16.2	1.66 H	165	57.60	4.40
5	*5745.00	109.8 PK			1.40 H	168	67.60	42.20
6	*5745.00	100.7 AV			1.40 H	168	58.50	42.20
7	11490.00	60.6 PK	74.0	-13.4	1.90 H	217	45.10	15.50
8	11490.00	48.1 AV	54.0	-5.9	1.90 H	217	32.60	15.50

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	68.1 PK	74.0	-5.9	1.16 V	301	63.70	4.40
2	#5714.90	51.9 AV	54.0	-2.1	1.16 V	301	47.50	4.40
3	#5722.90	74.3 PK	78.2	-3.9	1.39 V	288	69.90	4.40
4	#5725.00	59.0 PK	78.2	-19.2	1.45 V	286	54.60	4.40
5	*5745.00	109.0 PK			1.44 V	71	66.80	42.20
6	*5745.00	99.4 AV			1.44 V	71	57.20	42.20
7	11490.00	59.4 PK	74.0	-14.6	1.59 V	301	43.90	15.50
8	11490.00	45.3 AV	54.0	-8.7	1.59 V	301	29.80	15.50

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	111.4 PK			1.25 H	165	69.10	42.30
2	*5785.00	101.3 AV			1.25 H	165	59.00	42.30
3	11570.00	58.5 PK	74.0	-15.5	1.63 H	81	43.40	15.10
4	11570.00	45.2 AV	54.0	-8.8	1.63 H	81	30.10	15.10

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	111.0 PK			1.23 V	69	68.70	42.30
2	*5785.00	101.2 AV			1.23 V	69	58.90	42.30
3	11570.00	59.6 PK	74.0	-14.4	1.66 V	188	44.50	15.10
4	11570.00	46.6 AV	54.0	-7.4	1.66 V	188	31.50	15.10

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	110.3 PK			1.19 H	166	68.00	42.30
2	*5825.00	101.0 AV			1.19 H	166	58.70	42.30
3	#5850.00	61.0 PK	78.2	-17.2	1.23 H	164	56.30	4.70
4	#5852.10	72.9 PK	78.2	-5.3	1.22 H	165	68.20	4.70
5	#5860.10	68.1 PK	74.0	-5.9	1.23 H	166	63.40	4.70
6	#5860.10	52.7 AV	54.0	-1.3	1.23 H	166	48.00	4.70
7	11650.00	61.9 PK	74.0	-12.1	1.47 H	214	46.60	15.30
8	11650.00	48.6 AV	54.0	-5.4	1.47 H	214	33.30	15.30

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	110.0 PK			2.42 V	84	67.70	42.30
2	*5825.00	100.4 AV			2.42 V	84	58.10	42.30
3	#5850.00	63.0 PK	78.2	-15.2	2.36 V	83	58.30	4.70
4	#5852.10	74.4 PK	78.2	-3.8	2.37 V	84	69.70	4.70
5	#5860.10	67.0 PK	74.0	-7.0	2.34 V	84	62.30	4.70
6	#5860.10	51.5 AV	54.0	-2.5	2.34 V	84	46.80	4.70
7	11650.00	60.4 PK	74.0	-13.6	1.46 V	268	45.10	15.30
8	11650.00	46.7 AV	54.0	-7.3	1.46 V	268	31.40	15.30

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

**802.11n (HT20)**

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.5 PK	74.0	-5.5	1.00 H	48	64.60	3.90
2	5150.00	52.5 AV	54.0	-1.5	1.00 H	48	48.60	3.90
3	*5180.00	112.3 PK			1.37 H	150	70.80	41.50
4	*5180.00	102.3 AV			1.37 H	150	60.80	41.50
5	#10360.00	61.9 PK	74.0	-12.1	1.34 H	199	46.60	15.30
6	#10360.00	48.9 AV	54.0	-5.1	1.34 H	199	33.60	15.30

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.3 PK	74.0	-11.7	1.00 V	277	58.40	3.90
2	5150.00	50.1 AV	54.0	-3.9	1.00 V	277	46.20	3.90
3	*5180.00	109.3 PK			1.00 V	277	67.80	41.50
4	*5180.00	99.2 AV			1.00 V	277	57.70	41.50
5	#10360.00	60.7 PK	74.0	-13.3	1.00 V	212	45.40	15.30
6	#10360.00	46.9 AV	54.0	-7.1	1.00 V	212	31.60	15.30

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	113.1 PK			1.13 H	152	71.60	41.50
2	*5200.00	103.0 AV			1.13 H	152	61.50	41.50
3	#10400.00	62.6 PK	74.0	-11.4	1.37 H	192	47.10	15.50
4	#10400.00	49.4 AV	54.0	-4.6	1.37 H	192	33.90	15.50

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.6 PK			1.00 V	277	69.10	41.50
2	*5200.00	99.9 AV			1.00 V	277	58.40	41.50
3	#10400.00	59.8 PK	74.0	-14.2	1.33 V	26	44.30	15.50
4	#10400.00	46.4 AV	54.0	-7.6	1.33 V	26	30.90	15.50

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	113.0 PK			1.00 H	151	71.40	41.60
2	*5240.00	102.8 AV			1.00 H	151	61.20	41.60
3	5350.00	60.5 PK	74.0	-13.5	1.00 H	167	56.50	4.00
4	5350.00	48.2 AV	54.0	-5.8	1.00 H	167	44.20	4.00
5	#10480.00	62.9 PK	74.0	-11.1	1.00 H	177	47.10	15.80
6	#10480.00	49.8 AV	54.0	-4.2	1.00 H	177	34.00	15.80

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.0 PK			1.12 V	284	68.40	41.60
2	*5240.00	99.4 AV			1.12 V	284	57.80	41.60
3	5350.00	57.4 PK	74.0	-16.6	1.20 V	274	53.40	4.00
4	5350.00	46.1 AV	54.0	-7.9	1.20 V	274	42.10	4.00
5	#10480.00	60.5 PK	74.0	-13.5	1.01 V	55	44.70	15.80
6	#10480.00	47.8 AV	54.0	-6.2	1.01 V	55	32.00	15.80

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.9 PK	74.0	-15.1	1.84 H	162	55.00	3.90
2	5150.00	45.8 AV	54.0	-8.2	1.84 H	162	41.90	3.90
3	*5260.00	113.4 PK			1.13 H	151	71.80	41.60
4	*5260.00	103.6 AV			1.13 H	151	62.00	41.60
5	#10520.00	62.7 PK	74.0	-11.3	1.72 H	189	47.00	15.70
6	#10520.00	49.3 AV	54.0	-4.7	1.72 H	189	33.60	15.70

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.8 PK	74.0	-15.2	1.52 V	70	54.90	3.90
2	5150.00	45.4 AV	54.0	-8.6	1.52 V	70	41.50	3.90
3	*5260.00	112.2 PK			1.31 V	277	70.60	41.60
4	*5260.00	102.4 AV			1.31 V	277	60.80	41.60
5	#10520.00	60.9 PK	74.0	-13.1	1.15 V	194	45.20	15.70
6	#10520.00	47.9 AV	54.0	-6.1	1.15 V	194	32.20	15.70

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	111.1 PK			1.54 H	48	69.40	41.70
2	*5300.00	101.3 AV			1.54 H	48	59.60	41.70
3	5350.00	63.6 PK	74.0	-10.4	1.30 H	153	59.60	4.00
4	5350.00	50.3 AV	54.0	-3.7	1.30 H	153	46.30	4.00
5	10600.00	63.2 PK	74.0	-10.8	1.56 H	190	47.40	15.80
6	10600.00	49.9 AV	54.0	-4.1	1.56 H	190	34.10	15.80

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	112.2 PK			1.22 V	285	70.50	41.70
2	*5300.00	102.5 AV			1.22 V	285	60.80	41.70
3	5350.00	63.3 PK	74.0	-10.7	1.08 V	293	59.30	4.00
4	5350.00	51.4 AV	54.0	-2.6	1.08 V	293	47.40	4.00
5	10600.00	61.8 PK	74.0	-12.2	1.00 V	161	46.00	15.80
6	10600.00	48.3 AV	54.0	-5.7	1.00 V	161	32.50	15.80

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	112.4 PK			1.70 H	153	70.70	41.70
2	*5320.00	102.2 AV			1.70 H	153	60.50	41.70
3	5350.00	68.8 PK	74.0	-5.2	1.35 H	150	64.80	4.00
4	5350.00	52.6 AV	54.0	-1.4	1.35 H	150	48.60	4.00
5	10640.00	60.1 PK	74.0	-13.9	1.28 H	187	44.30	15.80
6	10640.00	46.9 AV	54.0	-7.1	1.28 H	187	31.10	15.80

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	111.5 PK			1.07 V	274	69.80	41.70
2	*5320.00	101.3 AV			1.07 V	274	59.60	41.70
3	5350.00	68.6 PK	74.0	-5.4	1.03 V	288	64.60	4.00
4	5350.00	51.9 AV	54.0	-2.1	1.03 V	288	47.90	4.00
5	10640.00	58.5 PK	74.0	-15.5	1.46 V	160	42.70	15.80
6	10640.00	45.4 AV	54.0	-8.6	1.46 V	160	29.60	15.80

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.1 PK	74.0	-11.9	1.32 H	144	58.20	3.90
2	5460.00	49.3 AV	54.0	-4.7	1.32 H	144	45.40	3.90
3	#5470.00	71.5 PK	74.0	-2.5	1.36 H	168	67.60	3.90
4	#5470.00	52.7 AV	54.0	-1.3	1.36 H	168	48.80	3.90
5	*5500.00	110.8 PK			1.04 H	136	69.20	41.60
6	*5500.00	100.5 AV			1.04 H	136	58.90	41.60
7	11000.00	62.5 PK	74.0	-11.5	1.43 H	166	45.30	17.20
8	11000.00	49.5 AV	54.0	-4.5	1.43 H	166	32.30	17.20

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.4 PK	74.0	-10.6	1.50 V	259	59.50	3.90
2	5460.00	49.9 AV	54.0	-4.1	1.50 V	259	46.00	3.90
3	#5470.00	71.9 PK	74.0	-2.1	1.46 V	257	68.00	3.90
4	#5470.00	52.5 AV	54.0	-1.5	1.46 V	257	48.60	3.90
5	*5500.00	112.7 PK			1.01 V	270	71.10	41.60
6	*5500.00	102.4 AV			1.01 V	270	60.80	41.60
7	11000.00	62.1 PK	74.0	-11.9	1.00 V	144	44.90	17.20
8	11000.00	48.5 AV	54.0	-5.5	1.00 V	144	31.30	17.20

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	112.4 PK			1.21 H	144	70.60	41.80
2	*5580.00	102.0 AV			1.21 H	144	60.20	41.80
3	11160.00	62.2 PK	74.0	-11.8	1.32 H	177	46.30	15.90
4	11160.00	50.1 AV	54.0	-3.9	1.32 H	177	34.20	15.90

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	114.0 PK			1.28 V	296	72.20	41.80
2	*5580.00	103.9 AV			1.28 V	296	62.10	41.80
3	11160.00	61.0 PK	74.0	-13.0	1.88 V	162	45.10	15.90
4	11160.00	47.9 AV	54.0	-6.1	1.88 V	162	32.00	15.90

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.8 PK			1.19 H	143	66.70	42.10
2	*5700.00	99.2 AV			1.19 H	143	57.10	42.10
3	#5725.00	68.4 PK	74.0	-5.6	1.28 H	145	64.00	4.40
4	#5725.00	52.9 AV	54.0	-1.1	1.28 H	145	48.50	4.40
5	11400.00	62.3 PK	74.0	-11.7	1.60 H	189	45.80	16.50
6	11400.00	48.8 AV	54.0	-5.2	1.60 H	189	32.30	16.50

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.8 PK			1.28 V	284	66.70	42.10
2	*5700.00	99.0 AV			1.28 V	284	56.90	42.10
3	#5725.00	69.5 PK	74.0	-4.5	1.04 V	283	65.10	4.40
4	#5725.00	53.0 AV	54.0	-1.0	1.04 V	283	48.60	4.40
5	11400.00	61.6 PK	74.0	-12.4	1.66 V	180	45.10	16.50
6	11400.00	48.4 AV	54.0	-5.6	1.66 V	180	31.90	16.50

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	69.6 PK	74.0	-4.4	1.16 H	143	65.20	4.40
2	#5714.90	52.8 AV	54.0	-1.2	1.16 H	143	48.40	4.40
3	#5722.90	74.9 PK	78.2	-3.3	1.12 H	137	70.50	4.40
4	#5725.00	62.0 PK	78.2	-16.2	1.17 H	143	57.60	4.40
5	*5745.00	109.5 PK			1.01 H	136	67.30	42.20
6	*5745.00	99.2 AV			1.01 H	136	57.00	42.20
7	11490.00	60.8 PK	74.0	-13.2	1.88 H	230	45.30	15.50
8	11490.00	48.3 AV	54.0	-5.7	1.88 H	230	32.80	15.50

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	70.6 PK	74.0	-3.4	1.16 V	281	66.20	4.40
2	#5714.90	52.1 AV	54.0	-1.9	1.16 V	281	47.70	4.40
3	#5722.90	75.1 PK	78.2	-3.1	1.16 V	281	70.70	4.40
4	#5725.00	61.9 PK	78.2	-16.3	1.21 V	281	57.50	4.40
5	*5745.00	109.6 PK			1.21 V	284	67.40	42.20
6	*5745.00	99.6 AV			1.21 V	284	57.40	42.20
7	11490.00	59.8 PK	74.0	-14.2	1.49 V	293	44.30	15.50
8	11490.00	46.0 AV	54.0	-8.0	1.49 V	293	30.50	15.50

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	111.0 PK			1.31 H	142	68.70	42.30
2	*5785.00	101.0 AV			1.31 H	142	58.70	42.30
3	11570.00	60.3 PK	74.0	-13.7	1.66 H	89	45.20	15.10
4	11570.00	46.9 AV	54.0	-7.1	1.66 H	89	31.80	15.10

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	112.3 PK			1.18 V	77	70.00	42.30
2	*5785.00	102.2 AV			1.18 V	77	59.90	42.30
3	11570.00	59.9 PK	74.0	-14.1	1.70 V	192	44.80	15.10
4	11570.00	47.0 AV	54.0	-7.0	1.70 V	192	31.90	15.10

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.



CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	109.8 PK			1.22 H	141	67.50	42.30
2	*5825.00	99.9 AV			1.22 H	141	57.60	42.30
3	#5850.00	61.9 PK	78.2	-16.3	1.02 H	138	57.20	4.70
4	#5852.10	74.2 PK	78.2	-4.0	1.11 H	137	69.50	4.70
5	#5860.10	70.7 PK	74.0	-3.3	1.19 H	141	66.00	4.70
6	#5860.10	52.9 AV	54.0	-1.1	1.19 H	141	48.20	4.70
7	11650.00	62.1 PK	74.0	-11.9	1.51 H	223	46.80	15.30
8	11650.00	48.8 AV	54.0	-5.2	1.51 H	223	33.50	15.30

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	109.2 PK			1.28 V	78	66.90	42.30
2	*5825.00	99.1 AV			1.28 V	78	56.80	42.30
3	#5850.00	59.7 PK	78.2	-18.5	1.30 V	83	55.00	4.70
4	#5852.10	72.6 PK	78.2	-5.6	1.41 V	77	67.90	4.70
5	#5860.10	69.8 PK	74.0	-4.2	1.37 V	77	65.10	4.70
6	#5860.10	52.7 AV	54.0	-1.3	1.37 V	77	48.00	4.70
7	11650.00	60.5 PK	74.0	-13.5	1.36 V	277	45.20	15.30
8	11650.00	46.9 AV	54.0	-7.1	1.36 V	277	31.60	15.30

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

**802.11n (HT40)**

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.7 PK	74.0	-5.3	1.00 H	48	64.80	3.90
2	5150.00	53.0 AV	54.0	-1.0	1.00 H	48	49.10	3.90
3	*5190.00	103.8 PK			1.00 H	46	62.30	41.50
4	*5190.00	93.5 AV			1.00 H	46	52.00	41.50
5	#10380.00	61.2 PK	74.0	-12.8	1.00 H	331	45.80	15.40
6	#10380.00	47.5 AV	54.0	-6.5	1.00 H	331	32.10	15.40

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.3 PK	74.0	-7.7	1.91 V	270	62.40	3.90
2	5150.00	51.5 AV	54.0	-2.5	1.91 V	270	47.60	3.90
3	*5190.00	101.8 PK			2.17 V	272	60.30	41.50
4	*5190.00	92.1 AV			2.17 V	272	50.60	41.50
5	#10380.00	60.8 PK	74.0	-13.2	1.00 V	145	45.40	15.40
6	#10380.00	47.4 AV	54.0	-6.6	1.00 V	145	32.00	15.40

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.6 PK	74.0	-5.4	1.00 H	47	64.70	3.90
2	5150.00	52.8 AV	54.0	-1.2	1.00 H	47	48.90	3.90
3	*5230.00	110.3 PK			1.00 H	48	68.70	41.60
4	*5230.00	100.4 AV			1.00 H	48	58.80	41.60
5	#10460.00	62.7 PK	74.0	-11.3	1.00 H	183	47.20	15.50
6	#10460.00	49.7 AV	54.0	-4.3	1.00 H	183	34.20	15.50

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.6 PK	74.0	-9.4	1.88 V	267	60.70	3.90
2	5150.00	50.6 AV	54.0	-3.4	1.88 V	267	46.70	3.90
3	*5230.00	108.2 PK			1.99 V	256	66.60	41.60
4	*5230.00	98.0 AV			1.99 V	256	56.40	41.60
5	#10460.00	61.1 PK	74.0	-12.9	1.17 V	45	45.60	15.50
6	#10460.00	47.9 AV	54.0	-6.1	1.17 V	45	32.40	15.50

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	109.6 PK			1.00 H	161	67.90	41.70
2	*5270.00	99.9 AV			1.00 H	161	58.20	41.70
3	5350.00	67.7 PK	74.0	-6.3	1.00 H	157	63.70	4.00
4	5350.00	52.8 AV	54.0	-1.2	1.00 H	157	48.80	4.00
5	#10540.00	62.9 PK	74.0	-11.1	1.78 H	195	47.10	15.80
6	#10540.00	50.0 AV	54.0	-4.0	1.78 H	195	34.20	15.80

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	109.2 PK			1.00 V	266	67.50	41.70
2	*5270.00	99.1 AV			1.00 V	266	57.40	41.70
3	5350.00	67.6 PK	74.0	-6.4	1.00 V	266	63.60	4.00
4	5350.00	52.2 AV	54.0	-1.8	1.00 V	266	48.20	4.00
5	#10540.00	61.7 PK	74.0	-12.3	1.00 V	171	45.90	15.80
6	#10540.00	48.9 AV	54.0	-5.1	1.00 V	171	33.10	15.80

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	107.7 PK			2.83 H	159	66.00	41.70
2	*5310.00	97.4 AV			2.83 H	159	55.70	41.70
3	5350.00	68.1 PK	74.0	-5.9	1.77 H	56	64.10	4.00
4	5350.00	53.0 AV	54.0	-1.0	1.77 H	56	49.00	4.00
5	10620.00	60.6 PK	74.0	-13.4	1.00 H	185	44.70	15.90
6	10620.00	47.7 AV	54.0	-6.3	1.00 H	185	31.80	15.90

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	106.7 PK			1.00 V	254	65.00	41.70
2	*5310.00	97.1 AV			1.00 V	254	55.40	41.70
3	5350.00	67.4 PK	74.0	-6.6	1.08 V	314	63.40	4.00
4	5350.00	52.4 AV	54.0	-1.6	1.08 V	314	48.40	4.00
5	10620.00	60.1 PK	74.0	-13.9	1.00 V	216	44.20	15.90
6	10620.00	47.0 AV	54.0	-7.0	1.00 V	216	31.10	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.



CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

## ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	67.5 PK	74.0	-6.5	1.25 H	265	63.60	3.90
2	5460.00	49.4 AV	54.0	-4.6	1.25 H	265	45.50	3.90
3	#5470.00	71.0 PK	74.0	-3.0	1.00 H	266	67.10	3.90
4	#5470.00	<b>53.8 AV</b>	<b>54.0</b>	<b>-0.2</b>	<b>1.00 H</b>	<b>266</b>	<b>49.90</b>	<b>3.90</b>
5	*5510.00	105.3 PK			1.00 H	267	63.70	41.60
6	*5510.00	95.6 AV			1.00 H	267	54.00	41.60
7	11020.00	60.5 PK	74.0	-13.5	1.00 H	215	43.60	16.90
8	11020.00	47.7 AV	54.0	-6.3	1.00 H	215	30.80	16.90

## ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.6 PK	74.0	-10.4	1.00 V	168	59.70	3.90
2	5460.00	48.2 AV	54.0	-5.8	1.00 V	168	44.30	3.90
3	#5470.00	66.8 PK	74.0	-7.2	1.16 V	156	62.90	3.90
4	#5470.00	52.5 AV	54.0	-1.5	1.16 V	156	48.60	3.90
5	*5510.00	102.4 PK			1.26 V	142	60.80	41.60
6	*5510.00	92.2 AV			1.26 V	142	50.60	41.60
7	11020.00	61.1 PK	74.0	-12.9	1.00 V	117	44.20	16.90
8	11020.00	47.5 AV	54.0	-6.5	1.00 V	117	30.60	16.90

## REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.8 PK	74.0	-10.2	1.00 H	156	59.90	3.90
2	5460.00	49.9 AV	54.0	-4.1	1.00 H	156	46.00	3.90
3	#5470.00	68.0 PK	74.0	-6.0	1.00 H	159	64.10	3.90
4	#5470.00	52.5 AV	54.0	-1.5	1.00 H	159	48.60	3.90
5	*5550.00	109.3 PK			1.00 H	161	67.60	41.70
6	*5550.00	99.6 AV			1.00 H	161	57.90	41.70
7	11100.00	61.5 PK	74.0	-12.5	2.64 H	172	45.70	15.80
8	11100.00	48.3 AV	54.0	-5.7	2.64 H	172	32.50	15.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.5 PK	74.0	-8.5	1.00 V	249	61.60	3.90
2	5460.00	51.9 AV	54.0	-2.1	1.00 V	249	48.00	3.90
3	#5470.00	70.0 PK	74.0	-4.0	1.00 V	267	66.10	3.90
4	#5470.00	52.6 AV	54.0	-1.4	1.00 V	267	48.70	3.90
5	*5550.00	113.1 PK			1.00 V	272	71.40	41.70
6	*5550.00	102.7 AV			1.00 V	272	61.00	41.70
7	11100.00	60.8 PK	74.0	-13.2	1.00 V	187	45.00	15.80
8	11100.00	47.6 AV	54.0	-6.4	1.00 V	187	31.80	15.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	107.2 PK			1.00 H	159	65.20	42.00
2	*5670.00	97.2 AV			1.00 H	159	55.20	42.00
3	#5725.00	67.2 PK	74.0	-6.8	1.00 H	158	62.80	4.40
4	#5725.00	52.6 AV	54.0	-1.4	1.00 H	158	48.20	4.40
5	11340.00	61.1 PK	74.0	-12.9	1.64 H	177	44.30	16.80
6	11340.00	48.0 AV	54.0	-6.0	1.64 H	177	31.20	16.80

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	108.9 PK			1.00 V	271	66.90	42.00
2	*5670.00	99.0 AV			1.00 V	271	57.00	42.00
3	#5725.00	61.8 PK	74.0	-12.2	1.00 V	249	57.40	4.40
4	#5725.00	49.6 AV	54.0	-4.4	1.00 V	249	45.20	4.40
5	11340.00	60.7 PK	74.0	-13.3	1.00 V	188	43.90	16.80
6	11340.00	47.6 AV	54.0	-6.4	1.00 V	188	30.80	16.80

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.





CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	67.2 PK	74.0	-6.8	1.25 H	160	62.80	4.40
2	#5714.90	52.4 AV	54.0	-1.6	1.25 H	160	48.00	4.40
3	#5722.90	67.8 PK	78.2	-10.4	1.32 H	147	63.40	4.40
4	#5725.00	55.6 PK	78.2	-22.6	1.49 H	166	51.20	4.40
5	*5755.00	103.2 PK			1.52 H	158	61.00	42.20
6	*5755.00	93.4 AV			1.52 H	158	51.20	42.20
7	11510.00	59.6 PK	74.0	-14.4	1.67 H	242	44.40	15.20
8	11510.00	46.2 AV	54.0	-7.8	1.67 H	242	31.00	15.20

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	66.2 PK	74.0	-7.8	1.00 V	269	61.80	4.40
2	#5714.90	51.5 AV	54.0	-2.5	1.00 V	269	47.10	4.40
3	#5722.90	68.4 PK	78.2	-9.8	1.10 V	255	64.00	4.40
4	#5725.00	55.1 PK	78.2	-23.1	1.00 V	266	50.70	4.40
5	*5755.00	103.1 PK			1.00 V	270	60.90	42.20
6	*5755.00	93.2 AV			1.00 V	270	51.00	42.20
7	11510.00	59.1 PK	74.0	-14.9	1.00 V	224	43.90	15.20
8	11510.00	45.4 AV	54.0	-8.6	1.00 V	224	30.20	15.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	107.8 PK			1.21 H	160	65.50	42.30
2	*5795.00	97.9 AV			1.21 H	160	55.60	42.30
3	#5850.00	55.5 PK	78.2	-22.7	1.19 H	145	50.80	4.70
4	#5852.10	69.8 PK	78.2	-8.4	1.52 H	167	65.10	4.70
5	#5860.10	67.3 PK	74.0	-6.7	1.44 H	158	62.60	4.70
6	#5860.10	52.8 AV	54.0	-1.2	1.44 H	158	48.10	4.70
7	11590.00	59.2 PK	74.0	-14.8	1.00 H	108	44.10	15.10
8	11590.00	46.1 AV	54.0	-7.9	1.00 H	108	31.00	15.10

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	107.2 PK			1.00 V	111	64.90	42.30
2	*5795.00	96.7 AV			1.00 V	111	54.40	42.30
3	#5850.00	54.3 PK	78.2	-23.9	1.03 V	121	49.60	4.70
4	#5852.10	67.5 PK	78.2	-10.7	1.01 V	258	62.80	4.70
5	#5860.10	63.9 PK	74.0	-10.1	1.00 V	267	59.20	4.70
6	#5860.10	51.0 AV	54.0	-3.0	1.00 V	267	46.30	4.70
7	11590.00	58.9 PK	74.0	-15.1	1.02 V	115	43.80	15.10
8	11590.00	46.0 AV	54.0	-8.0	1.02 V	115	30.90	15.10

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

**802.11ac (VHT80)**

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.0 PK	74.0	-6.0	1.00 H	160	64.10	3.90
2	5150.00	53.7 AV	54.0	-0.3	1.00 H	160	49.80	3.90
3	*5210.00	101.3 PK			1.00 H	161	59.70	41.60
4	*5210.00	91.2 AV			1.00 H	161	49.60	41.60
5	#10420.00	60.0 PK	74.0	-14.0	1.00 H	225	44.50	15.50
6	#10420.00	47.4 AV	54.0	-6.6	1.00 H	225	31.90	15.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.2 PK	74.0	-8.8	1.00 V	268	61.30	3.90
2	5150.00	52.2 AV	54.0	-1.8	1.00 V	268	48.30	3.90
3	*5210.00	99.1 PK			1.03 V	288	57.50	41.60
4	*5210.00	88.8 AV			1.03 V	288	47.20	41.60
5	#10420.00	60.0 PK	74.0	-14.0	1.00 V	154	44.50	15.50
6	#10420.00	47.1 AV	54.0	-6.9	1.00 V	154	31.60	15.50

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5290.00	100.1 PK			1.00 H	161	58.40	41.70
2	*5290.00	89.8 AV			1.00 H	161	48.10	41.70
3	5350.00	66.2 PK	74.0	-7.8	1.00 H	162	62.20	4.00
4	5350.00	53.0 AV	54.0	-1.0	1.00 H	162	49.00	4.00
5	#10580.00	60.7 PK	74.0	-13.3	1.00 H	214	44.90	15.80
6	#10580.00	47.7 AV	54.0	-6.3	1.00 H	214	31.90	15.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5290.00	101.2 PK			1.00 V	254	59.50	41.70
2	*5290.00	90.4 AV			1.00 V	254	48.70	41.70
3	5350.00	67.8 PK	74.0	-6.2	1.00 V	269	63.80	4.00
4	5350.00	52.2 AV	54.0	-1.8	1.00 V	269	48.20	4.00
5	#10580.00	60.3 PK	74.0	-13.7	1.01 V	68	44.50	15.80
6	#10580.00	47.3 AV	54.0	-6.7	1.01 V	68	31.50	15.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.4 PK	74.0	-12.6	1.00 H	145	57.50	3.90
2	5460.00	48.8 AV	54.0	-5.2	1.00 H	145	44.90	3.90
3	#5470.00	62.9 PK	68.2	-5.3	1.00 H	168	59.00	3.90
4	*5530.00	97.5 PK			1.10 H	149	55.80	41.70
5	*5530.00	86.8 AV			1.10 H	149	45.10	41.70
6	11060.00	60.2 PK	74.0	-13.8	1.00 H	88	43.90	16.30
7	11060.00	47.2 AV	54.0	-6.8	1.00 H	88	30.90	16.30

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.2 PK	74.0	-7.8	2.47 V	269	62.30	3.90
2	5460.00	53.1 AV	54.0	-0.9	2.47 V	269	49.20	3.90
3	#5470.00	67.1 PK	68.2	-1.1	2.30 V	268	63.20	3.90
4	*5530.00	100.8 PK			2.53 V	269	59.10	41.70
5	*5530.00	90.5 AV			2.53 V	269	48.80	41.70
6	11060.00	60.3 PK	74.0	-13.7	1.58 V	142	44.00	16.30
7	11060.00	47.2 AV	54.0	-6.8	1.58 V	142	30.90	16.30

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	67.3 PK	74.0	-6.7	1.36 H	157	62.90	4.40
2	#5714.90	53.5 AV	54.0	-0.5	1.36 H	157	49.10	4.40
3	#5722.90	68.0 PK	78.2	-10.2	1.40 H	162	63.60	4.40
4	#5725.00	51.6 PK	78.2	-26.6	1.58 H	147	47.20	4.40
5	*5775.00	99.6 PK			1.51 H	161	57.40	42.20
6	*5775.00	89.2 AV			1.51 H	161	47.00	42.20
7	#5850.00	50.0 PK	78.2	-28.2	1.68 H	201	45.30	4.70
8	#5852.10	63.8 PK	78.2	-14.4	1.42 H	142	59.10	4.70
9	#5860.10	62.5 PK	74.0	-11.5	1.66 H	201	57.80	4.70
10	#5860.10	49.0 AV	54.0	-5.0	1.66 H	201	44.30	4.70
11	11550.00	59.1 PK	74.0	-14.9	1.42 H	351	44.00	15.10
12	11550.00	46.0 AV	54.0	-8.0	1.42 H	351	30.90	15.10

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	64.0 PK	74.0	-10.0	1.00 V	266	59.60	4.40
2	#5714.90	51.0 AV	54.0	-3.0	1.00 V	266	46.60	4.40
3	#5722.90	65.1 PK	78.2	-13.1	1.08 V	288	60.70	4.40
4	#5725.00	53.2 PK	78.2	-25.0	1.34 V	225	48.80	4.40
5	*5775.00	99.3 PK			1.00 V	269	57.10	42.20
6	*5775.00	89.3 AV			1.00 V	269	47.10	42.20
7	#5850.00	49.8 PK	78.2	-28.4	1.13 V	257	45.10	4.70
8	#5852.10	62.2 PK	78.2	-16.0	1.23 V	276	57.50	4.70
9	#5860.10	61.5 PK	74.0	-12.5	1.00 V	215	56.80	4.70
10	#5860.10	48.4 AV	54.0	-5.6	1.00 V	215	43.70	4.70
11	11550.00	58.6 PK	74.0	-15.4	1.00 V	230	43.50	15.10
12	11550.00	45.8 AV	54.0	-8.2	1.00 V	230	30.70	15.10

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

Below 1GHz worst-case data:

802.11n (HT20)

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.13	21.5 QP	40.0	-18.5	2.00 H	222	35.50	-14.00
2	136.62	19.4 QP	43.5	-24.1	1.50 H	20	34.00	-14.60
3	198.71	23.0 QP	43.5	-20.5	1.50 H	216	39.60	-16.60
4	253.05	34.7 QP	46.0	-11.3	1.00 H	234	49.10	-14.40
5	381.11	29.8 QP	46.0	-16.2	1.00 H	325	41.20	-11.40
6	939.95	32.9 QP	46.0	-13.1	1.00 H	61	33.90	-1.00

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	51.24	34.4 QP	40.0	-5.6	1.00 V	74	48.30	-13.90
2	99.75	25.2 QP	43.5	-18.3	1.00 V	9	43.70	-18.50
3	165.73	33.3 QP	43.5	-10.2	1.00 V	137	47.30	-14.00
4	239.46	29.9 QP	46.0	-16.1	1.00 V	153	45.00	-15.10
5	431.56	28.9 QP	46.0	-17.1	1.24 V	345	39.20	-10.30
6	798.30	36.4 QP	46.0	-9.6	1.00 V	117	39.40	-3.00

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

- Note:** 1. The lower limit shall apply at the transition frequencies.  
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCS 30	100288	Apr. 27, 2015	Apr. 26, 2016
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2015	Feb. 25, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 2016
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
 2. The test was performed in HwaYa Shielded Room 1.  
 3. The VCCI Site Registration No. is C-2040.



### 4.2.3 Test Procedures

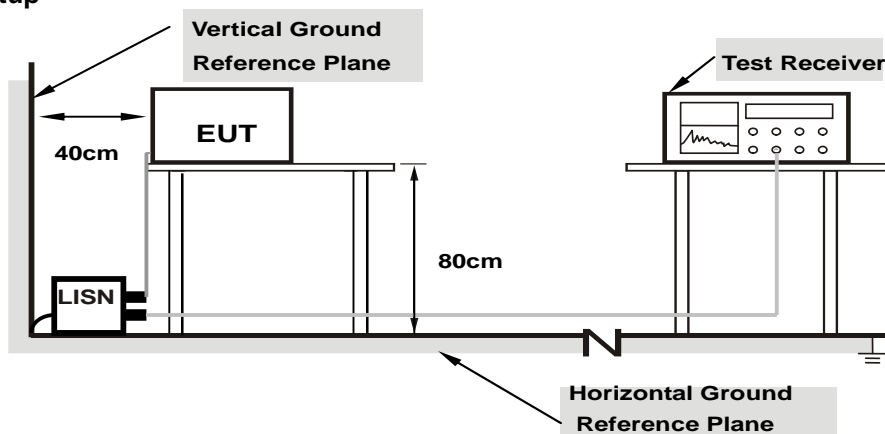
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

### 4.2.4 Deviation from Test Standard

No deviation.

### 4.2.5 Test Setup



**Note:** 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 4.2.6 EUT Operating Conditions

Same as 4.1.6.

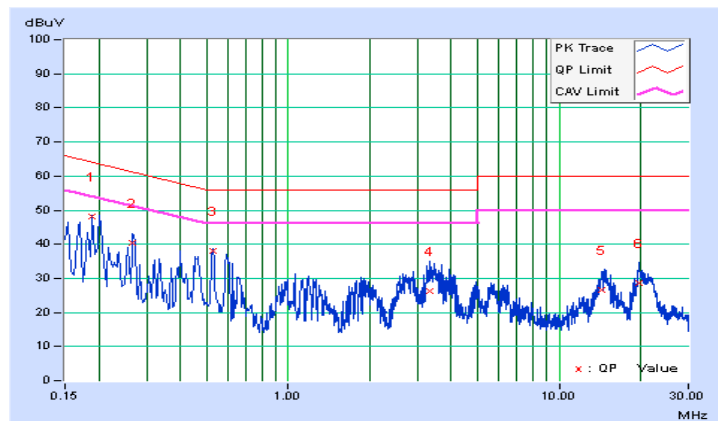
### 4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18910	9.84	38.15	23.79	47.99	33.63	64.08
2	0.26730	9.85	30.57	16.93	40.42	26.78	61.20	51.20	-20.78	-24.42
<b>3</b>	<b>0.52927</b>	<b>9.89</b>	<b>28.15</b>	<b>26.57</b>	<b>38.04</b>	<b>36.46</b>	<b>56.00</b>	<b>46.00</b>	<b>-17.96</b>	<b>-9.54</b>
4	3.33274	10.09	16.19	8.93	26.28	19.02	56.00	46.00	-29.72	-26.98
5	14.43714	10.77	15.79	1.38	26.56	12.15	60.00	50.00	-33.44	-37.85
6	19.73128	11.07	17.49	10.45	28.56	21.52	60.00	50.00	-31.44	-28.48

#### REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

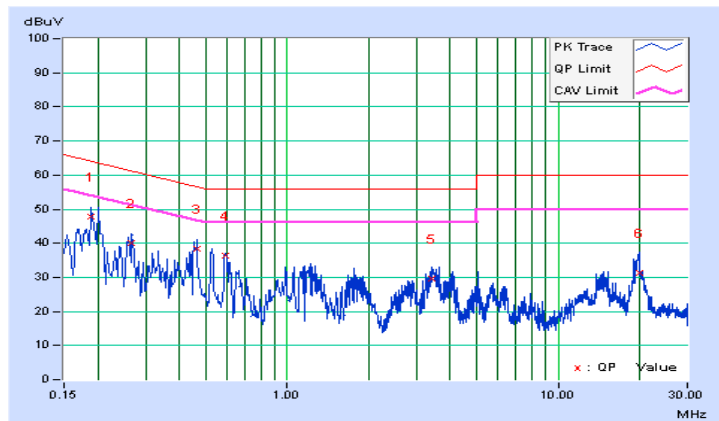


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18853	9.83	38.08	23.37	47.91	33.20	64.10
2	0.26730	9.85	30.08	16.76	39.93	26.61	61.20	51.20	-21.27	-24.59
3	0.46301	9.89	28.42	24.77	38.31	34.66	56.64	46.64	-18.33	-11.98
4	0.58792	9.90	26.51	22.02	36.41	31.92	56.00	46.00	-19.59	-14.08
5	3.40703	10.09	19.43	13.66	29.52	23.75	56.00	46.00	-26.48	-22.25
6	19.86813	10.91	20.25	13.42	31.16	24.33	60.00	50.00	-28.84	-25.67

**REMARKS:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



### 4.3 Transmit Power Measurement

#### 4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A		√	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C		√	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3		√	1 Watt (30 dBm)

\*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;

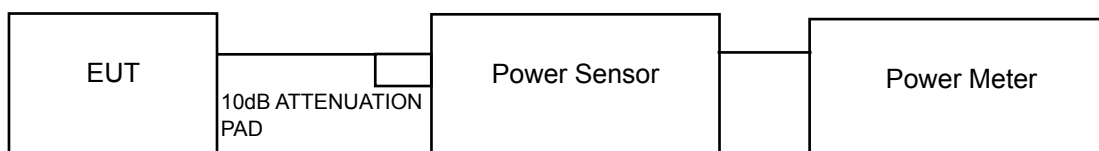
Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$ ;

Array Gain =  $5 \log(N_{ANT}/N_{SS})$  dB or 3 dB, whichever is less for 20-MHz channel widths with  $N_{ANT} \geq 5$ .

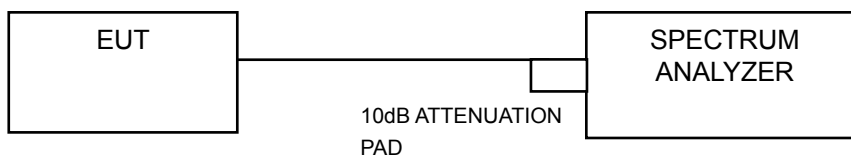
For power measurements on all other devices: Array Gain =  $10 \log(N_{ANT}/N_{SS})$  dB.

#### 4.3.2 Test Setup

For Power Output Measurement



For 26dB and Occupied Bandwidth



#### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 Test Procedure

##### FOR AVERAGE POWER MEASUREMENT

###### For 802.11a, 802.11n (HT20), 802.11n (HT40)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

###### For 802.11ac (VHT80)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to "free run".
- 3) Set RBW = 1 MHz.
- 4) Set VBW  $\geq$  3 MHz
- 5) Number of points in sweep  $\geq$  2 Span / RBW.
- 6) Sweep time  $\leq$  (number of points in sweep) \* T
- 7) Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
- 8) Detector = RMS.
- 9) Trace mode = max hold.
- 10) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

### 4.3.7 Test Result

#### POWER OUTPUT:

#### 802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	18.27	18.83	143.527	21.57	24	Pass
40	5200	20.08	19.50	190.984	22.81	24	Pass
48	5240	20.44	19.37	197.159	22.95	24	Pass
52	5260	19.58	19.44	178.684	22.52	24	Pass
60	5300	20.03	19.19	183.678	22.64	24	Pass
64	5320	16.27	16.53	87.342	19.41	24	Pass
100	5500	16.72	17.24	99.955	20.00	24	Pass
116	5580	19.44	19.59	178.893	22.53	24	Pass
140	5700	16.33	16.84	91.260	19.60	24	Pass
149	5745	16.78	17.55	104.528	20.19	30	Pass
157	5785	18.83	18.60	<b>148.828</b>	21.73	30	Pass
165	5825	17.67	17.95	120.852	20.82	30	Pass

#### NOTE:

#### For U-NII-2A, U-NII-2C Band:

##### Chain 0

1.  $11\text{dBm} + 10\log(37.22) = 26.71\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(38.40) = 26.84\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(21.80) = 24.38\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(21.64) = 24.35\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(39.05) = 26.92\text{ dBm} > 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(21.80) = 24.38\text{ dBm} > 24\text{dBm}$ .

##### Chain 1

1.  $11\text{dBm} + 10\log(38.93) = 26.90\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(38.24) = 26.83\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(21.80) = 24.38\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(21.64) = 24.35\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(37.15) = 26.70\text{ dBm} > 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(21.77) = 24.38\text{ dBm} > 24\text{dBm}$ .

**802.11n (HT20)**

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	15.54	15.29	69.616	18.43	24	Pass
40	5200	19.96	19.60	190.284	22.79	24	Pass
48	5240	20.54	19.42	<b>200.738</b>	23.03	24	Pass
52	5260	19.70	19.99	193.095	22.86	24	Pass
60	5300	20.29	19.43	<b>194.605</b>	22.89	24	Pass
64	5320	15.70	15.64	73.798	18.68	24	Pass
100	5500	15.95	16.60	85.064	19.30	24	Pass
116	5580	20.06	19.12	<b>183.049</b>	22.63	24	Pass
140	5700	16.42	16.33	86.807	19.39	24	Pass
149	5745	16.43	17.12	95.477	19.80	30	Pass
157	5785	18.92	18.29	145.436	21.63	30	Pass
165	5825	17.74	18.10	123.994	20.93	30	Pass

**NOTE:**
**For U-NII-2A, U-NII-2C Band:**
**Chain 0**

1.  $11\text{dBm} + 10\log(41.35) = 27.16\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(41.89) = 27.22\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(22.07) = 24.44\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(22.09) = 24.44\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(40.35) = 27.06\text{ dBm} > 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(21.99) = 24.42\text{ dBm} > 24\text{dBm}$ .

**Chain 1**

1.  $11\text{dBm} + 10\log(41.95) = 27.23\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(41.83) = 27.21\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(21.79) = 24.38\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(21.85) = 24.39\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(42.71) = 27.31\text{ dBm} > 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(21.83) = 24.39\text{ dBm} > 24\text{dBm}$ .

**802.11n (HT40)**

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	10.88	11.22	25.489	14.06	24	Pass
46	5230	19.94	19.52	188.164	22.75	24	Pass
54	5270	17.83	17.81	121.069	20.83	24	Pass
62	5310	15.45	15.33	69.194	18.40	24	Pass
102	5510	11.11	11.80	28.048	14.48	24	Pass
110	5550	18.01	17.81	123.636	20.92	24	Pass
134	5670	16.23	15.83	80.258	19.04	24	Pass
151	5755	12.46	12.63	35.943	15.56	30	Pass
159	5795	16.63	17.00	96.145	19.83	30	Pass

**NOTE:**
**For U-NII-2A, U-NII-2C Band:**
**Chain 0**

1.  $11\text{dBm} + 10\log(56.57) = 28.53\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(41.83) = 27.21\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(41.73) = 27.20\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(86.29) = 30.36\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(41.75) = 27.21\text{ dBm} > 24\text{dBm}$ .

**Chain 1**

1.  $11\text{dBm} + 10\log(41.60) = 27.19\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(41.56) = 27.19\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(41.63) = 27.19\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(87.46) = 30.42\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(41.49) = 27.18\text{ dBm} > 24\text{dBm}$ .

**802.11ac (VHT80)**

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	10.94	10.80	24.440	13.88	24	Pass
58	5290	11.00	10.96	25.063	13.99	24	Pass
106	5530	10.96	11.62	26.995	14.31	24	Pass
155	5775	12.21	12.31	33.656	15.27	30	Pass

**NOTE:**
**For U-NII-2A, U-NII-2C Band:**
**Chain 0**

1.  $11\text{dBm} + 10\log(82.43) = 30.16\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(82.73) = 30.18\text{ dBm} > 24\text{dBm}$ .

**Chain 1**

1.  $11\text{dBm} + 10\log(82.13) = 30.15\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(82.30) = 30.15\text{ dBm} > 24\text{dBm}$ .



**26dB BANDWIDTH:**
**802.11a**

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
36	5180	28.77	21.65	Pass
40	5200	36.04	39.12	Pass
48	5240	35.09	38.75	Pass
52	5260	37.22	38.93	Pass
60	5300	38.40	38.24	Pass
64	5320	21.80	21.80	Pass
100	5500	21.64	21.64	Pass
116	5580	39.05	37.15	Pass
140	5700	21.80	21.77	Pass

**802.11n (HT20)**

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
36	5180	22.05	21.87	Pass
40	5200	41.01	41.85	Pass
48	5240	43.03	43.75	Pass
52	5260	41.35	41.95	Pass
60	5300	41.89	41.83	Pass
64	5320	22.07	21.79	Pass
100	5500	22.09	21.85	Pass
116	5580	40.35	42.71	Pass
140	5700	21.99	21.83	Pass

**802.11n (HT40)**

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
38	5190	41.60	41.34	Pass
46	5230	97.90	96.62	Pass
54	5270	56.57	41.60	Pass
62	5310	41.83	41.56	Pass
102	5510	41.73	41.63	Pass
110	5550	86.29	87.46	Pass
134	5670	41.75	41.49	Pass

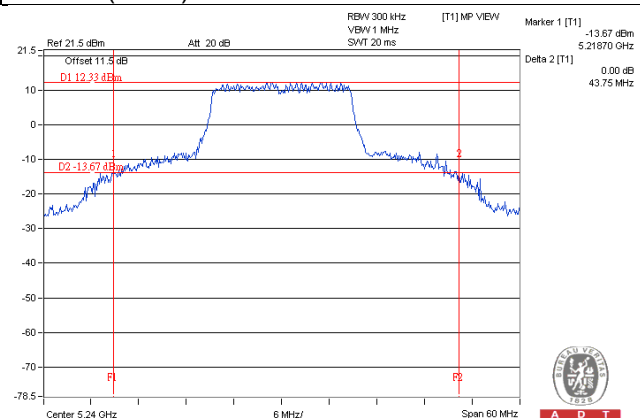
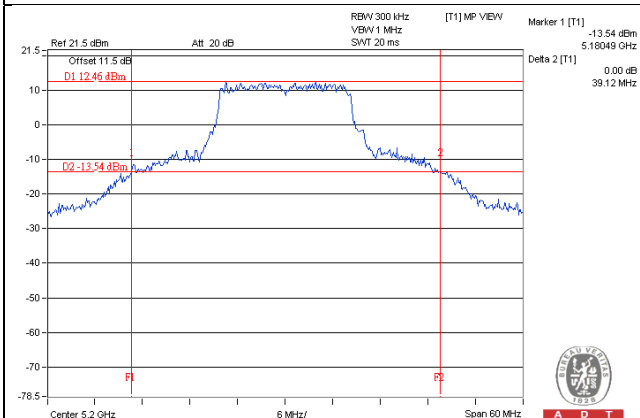
**802.11ac (VHT80)**

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
42	5210	82.59	82.28	Pass
58	5290	82.43	82.13	Pass
106	5530	82.73	82.30	Pass

### Spectrum Plot of Worst Value

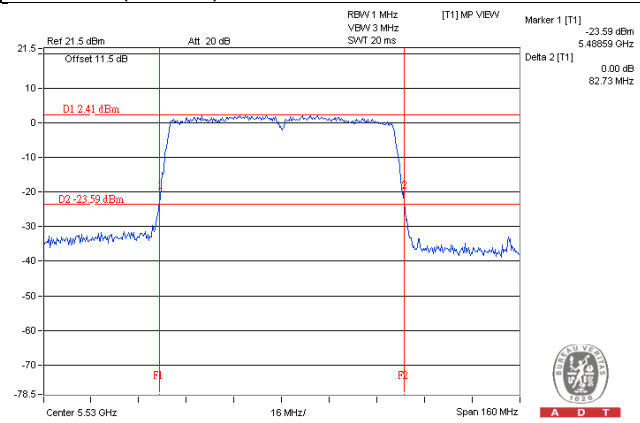
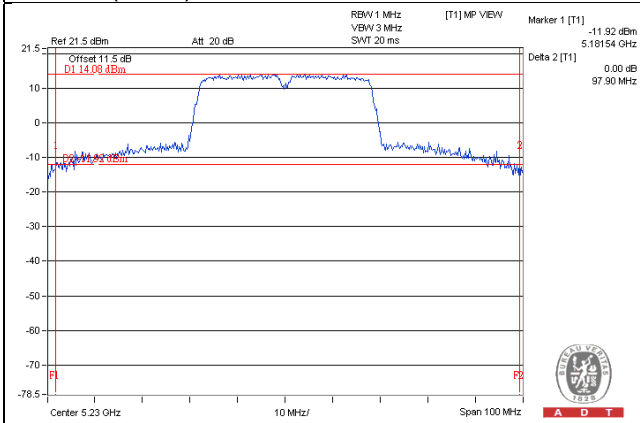
802.11a

802.11n (HT20)



802.11n (HT40)

802.11ac (VHT80)



**OCCUPIED BANDWIDTH:**

**802.11a**

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.40	17.16
40	5200	17.76	20.16
48	5240	18.12	19.44
52	5260	18.48	19.56
60	5300	18.12	19.08
64	5320	17.04	16.92
100	5500	17.28	17.04
116	5580	18.24	18.48
140	5700	16.92	16.92
149	5745	17.04	17.16
157	5785	18.12	17.52
165	5825	17.28	17.16

**802.11n (HT20)**

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.12	18.00
40	5200	19.08	22.32
48	5240	19.08	18.48
52	5260	19.08	19.92
60	5300	19.08	20.40
64	5320	18.12	18.00
100	5500	18.12	18.00
116	5580	18.84	19.20
140	5700	18.12	18.12
149	5745	18.00	17.88
157	5785	18.36	18.48
165	5825	18.24	18.36

**802.11n (HT40)**

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.72	36.60
46	5230	37.20	37.56
54	5270	36.72	36.72
62	5310	36.72	36.72
102	5510	36.72	36.72
110	5550	36.72	36.96
134	5670	36.72	36.72
151	5755	36.72	36.60
159	5795	36.96	36.96

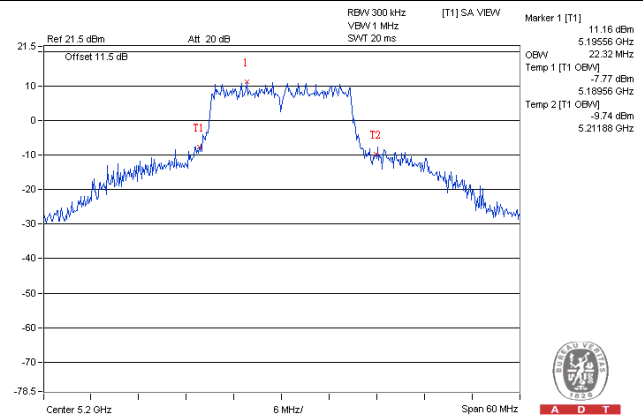
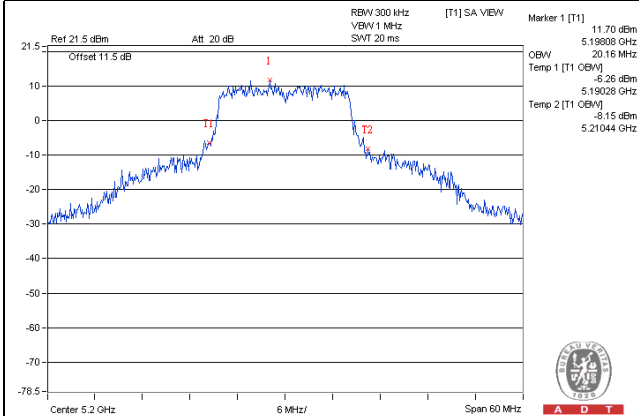
**802.11ac (VHT80)**

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	76.08	76.08
58	5290	75.84	75.84
106	5530	75.84	76.08
155	5775	75.84	75.84

Spectrum Plot of Worst Value

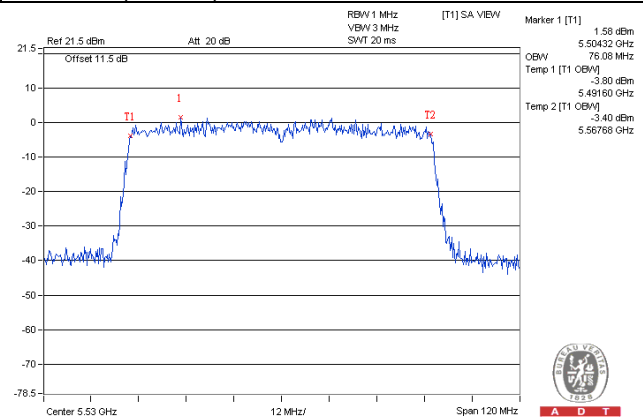
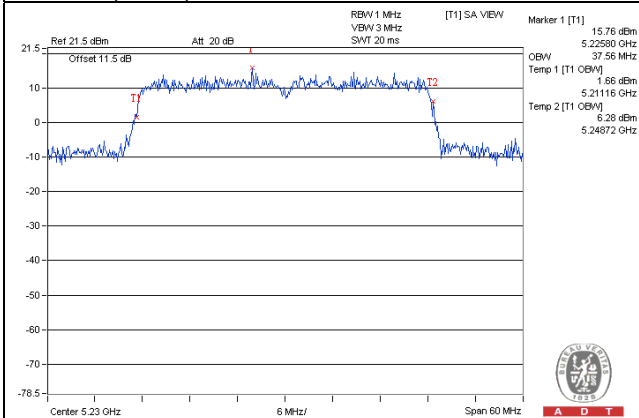
802.11a

802.11n (HT20)



802.11n (HT40)

802.11ac (VHT80)



**EUT MAXIMUM CONDUCTED POWER**
**802.11a**

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	183.678	22.64
5470~5725	178.893	22.53

**NOTE:** Manufacturer provides Transmit Power Control description to meet this requirement.

**802.11n (HT20)**

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	194.605	22.89
5470~5725	183.049	22.63

**NOTE:** Manufacturer provides Transmit Power Control description to meet this requirement.

**802.11n (HT40)**

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	121.069	20.83
5470~5725	123.636	20.92

**NOTE:** Manufacturer provides Transmit Power Control description to meet this requirement.

**802.11ac (VHT80)**

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	25.063	13.99
5470~5725	26.995	14.31

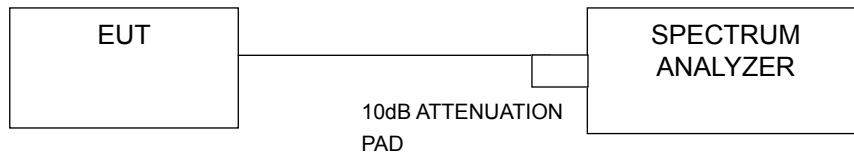
**NOTE:** Manufacturer provides Transmit Power Control description to meet this requirement.

#### 4.4 Peak Power Spectral Density Measurement

##### 4.4.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

##### 4.4.2 Test Setup



##### 4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.



#### 4.4.4 Test Procedures

##### For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW  $\geq$  3 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add  $10 \log (1/\text{duty cycle})$

##### For U-NII-3 band:

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 kHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- 4) Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $\text{BWCF} = 10\log(500 \text{ kHz}/300\text{kHz})$
- 5) Sweep time = auto, trigger set to "free run".
- 6) Trace average at least 100 traces in power averaging mode.
- 7) Record the max value and add  $10 \log (1/\text{duty cycle})$

#### 4.4.5 Deviation from Test Standard

No deviation.

#### 4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

#### 4.4.7 Test Results

#### For U-NII-1, U-NII-2A, U-NII-2C Band

##### 802.11a

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
36	5180	4.65	4.31	7.50	0.46	7.96	11.00	Pass
40	5200	5.47	6.62	9.10	0.46	9.56	11.00	Pass
48	5240	5.71	6.44	9.10	0.46	9.56	11.00	Pass
52	5260	5.67	6.26	8.99	0.46	9.45	11.00	Pass
60	5300	5.27	5.82	8.57	0.46	9.03	11.00	Pass
64	5320	1.90	1.98	4.95	0.46	5.41	11.00	Pass
100	5500	1.18	3.02	5.21	0.46	5.67	11.00	Pass
116	5580	4.70	5.13	7.93	0.46	8.39	11.00	Pass
140	5700	2.09	2.65	5.39	0.46	5.85	11.00	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $2.97\text{dBi} + 10\log(2) = 5.98\text{dBi} < 6\text{dBi}$ , so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

**802.11n (HT20)**

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
36	5180	0.95	0.82	3.89	0.39	4.28	11.00	Pass
40	5200	5.67	6.60	9.17	0.39	9.56	11.00	Pass
48	5240	5.38	6.39	8.92	0.39	9.31	11.00	Pass
52	5260	5.39	5.99	8.71	0.39	9.10	11.00	Pass
60	5300	5.08	5.91	8.52	0.39	8.91	11.00	Pass
64	5320	0.82	1.06	3.95	0.39	4.34	11.00	Pass
100	5500	0.57	2.31	4.53	0.39	4.92	11.00	Pass
116	5580	3.84	4.96	7.44	0.39	7.83	11.00	Pass
140	5700	1.67	2.22	4.96	0.39	5.35	11.00	Pass

**Note:**

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $2.97\text{dBi} + 10\log(2) = 5.98\text{dBi} < 6\text{dBi}$ , so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

**802.11n (HT40)**

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
38	5190	-6.43	-6.41	-3.41	0.92	-2.49	11.00	Pass
46	5230	2.56	3.48	6.05	0.92	6.97	11.00	Pass
54	5270	0.35	-0.02	3.17	0.92	4.09	11.00	Pass
62	5310	-1.40	-2.36	1.15	0.92	2.07	11.00	Pass
102	5510	-6.14	-5.58	-2.85	0.92	-1.93	11.00	Pass
110	5550	0.36	1.29	3.86	0.92	4.78	11.00	Pass
134	5670	-1.85	-2.54	0.82	0.92	1.74	11.00	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $2.97\text{dBi} + 10\log(2) = 5.98\text{dBi} < 6\text{dBi}$ , so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

**802.11ac (VHT80)**

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
42	5210	-9.53	-9.46	-6.49	0.92	-5.57	11.00	Pass
58	5290	-9.22	-8.87	-6.04	0.92	-5.12	11.00	Pass
106	5530	-8.89	-9.21	-6.04	0.92	-5.12	11.00	Pass

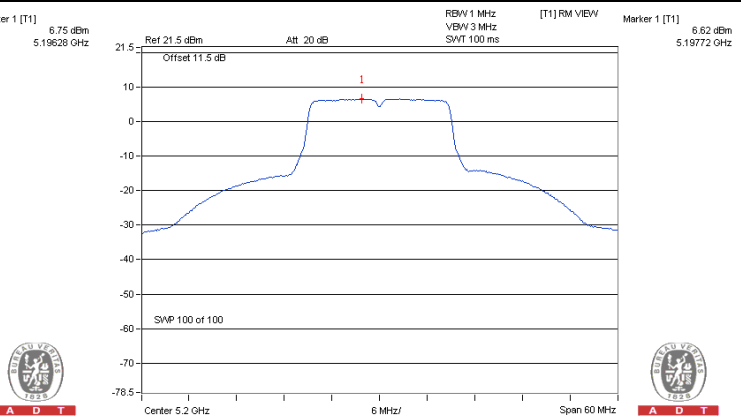
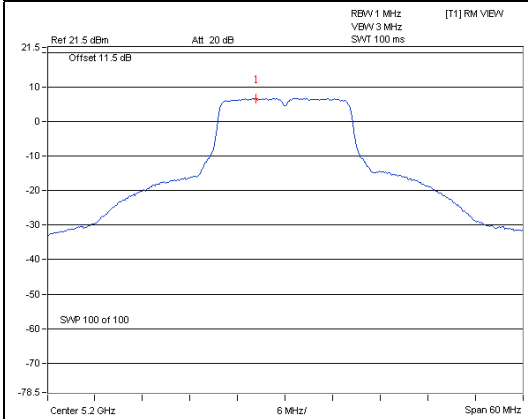
Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $2.97\text{dBi} + 10\log(2) = 5.98\text{dBi} < 6\text{dBi}$ , so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

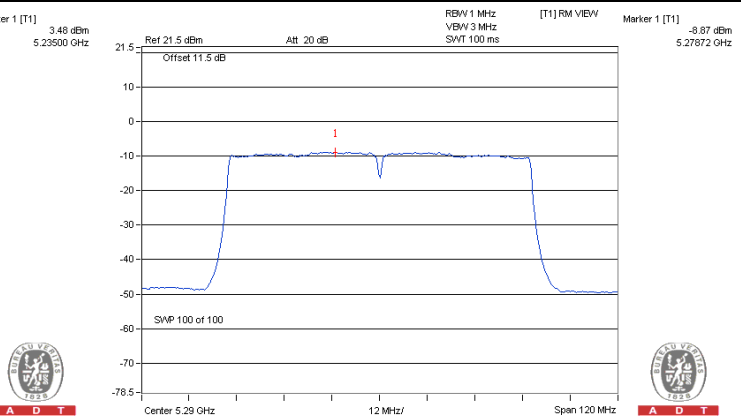
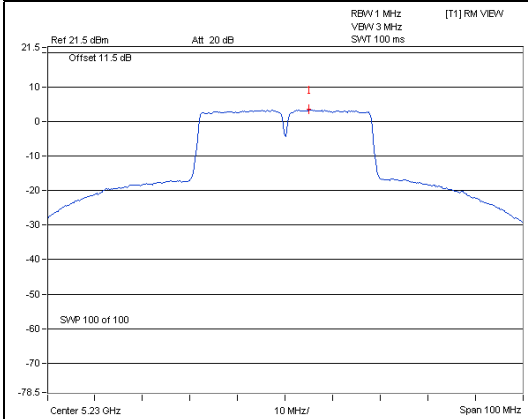
802.11a / Ch 40 / Chain 1

802.11n (HT20) / Ch 40 / Chain 1



802.11n (HT40) / Ch 46 / Chain 1

802.11ac (VHT80) / Ch 58 / Chain 1



## For U-NII-3 Band

### 802.11a

TX chain	Chan.	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	149	5745	-4.55	-2.33	3.01	0.46	1.14	30.00	Pass
	157	5785	-3.37	-1.15	3.01	0.46	2.32	30.00	Pass
	165	5825	-4.29	-2.07	3.01	0.46	1.40	30.00	Pass
1	149	5745	-3.71	-1.49	3.01	0.46	1.98	30.00	Pass
	157	5785	-3.50	-1.28	3.01	0.46	2.19	30.00	Pass
	165	5825	-4.49	-2.27	3.01	0.46	1.20	30.00	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $2.97\text{dBi} + 10\log(2) = 5.98\text{dBi} < 6\text{dBi}$ , so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

### 802.11n (HT20)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	149	5745	-5.05	-2.83	3.01	0.39	0.57	30.00	Pass
	157	5785	-4.36	-2.14	3.01	0.39	1.26	30.00	Pass
	165	5825	-5.17	-2.95	3.01	0.39	0.45	30.00	Pass
1	149	5745	-6.11	-3.89	3.01	0.39	-0.49	30.00	Pass
	157	5785	-4.44	-2.22	3.01	0.39	1.18	30.00	Pass
	165	5825	-4.85	-2.63	3.01	0.39	0.77	30.00	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $2.97\text{dBi} + 10\log(2) = 5.98\text{dBi} < 6\text{dBi}$ , so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

**802.11n (HT40)**

TX chain	Chan.	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	151	5755	-11.85	-9.63	3.01	0.92	-5.70	30.00	Pass
	159	5795	-9.92	-7.70	3.01	0.92	-3.77	30.00	Pass
1	151	5755	-13.70	-11.48	3.01	0.92	-7.55	30.00	Pass
	159	5795	-8.36	-6.14	3.01	0.92	-2.21	30.00	Pass

**Note:**

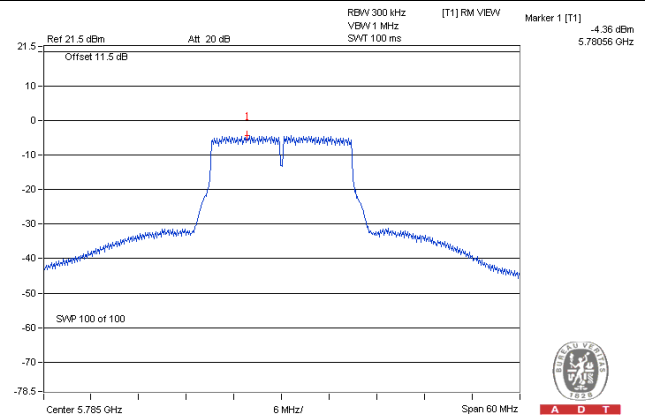
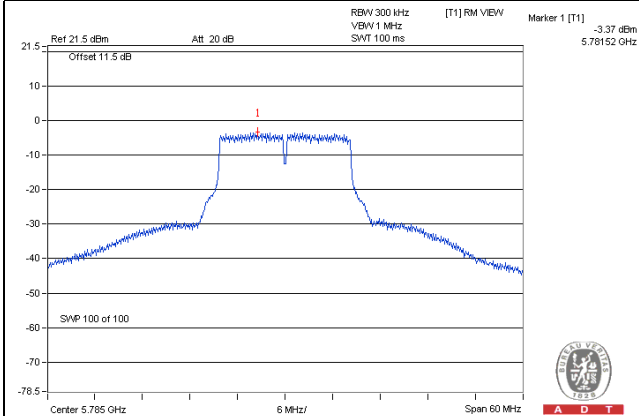
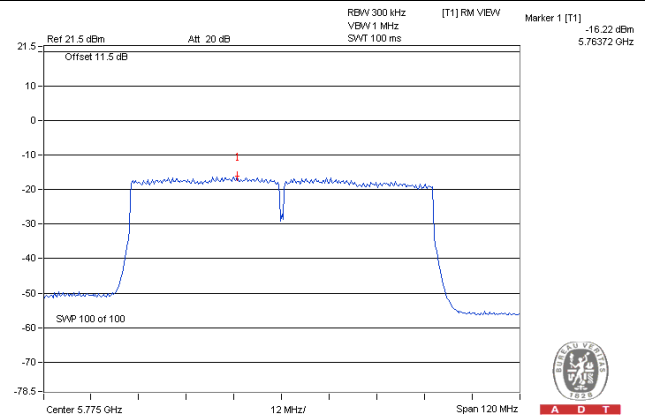
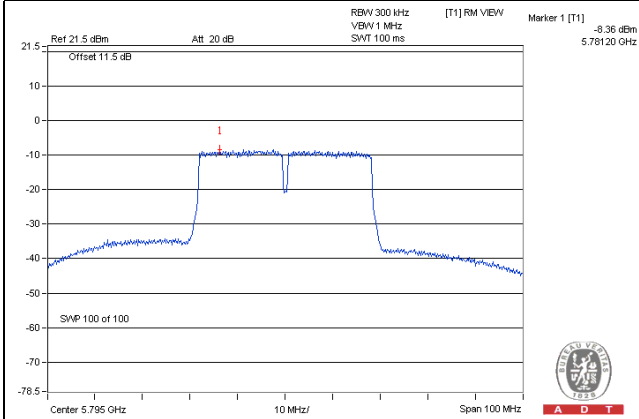
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.72\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $30 - (6.72 - 6) = 29.28\text{dBm}$ .
- Refer to section 3.3 for duty cycle spectrum plot.

**802.11ac (VHT80)**

TX chain	Chan.	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	155	5775	-16.22	-14.00	3.01	0.92	-10.07	30.00	Pass
1	155	5775	-16.25	-14.03	3.01	0.92	-10.10	30.00	Pass

**Note:**

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.72\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $30 - (6.72 - 6) = 29.28\text{dBm}$ .
- Refer to section 3.3 for duty cycle spectrum plot.

**Spectrum Plot of Worst Value****802.11a****802.11n (HT20)****802.11n (HT40)****802.11ac (VHT80)**

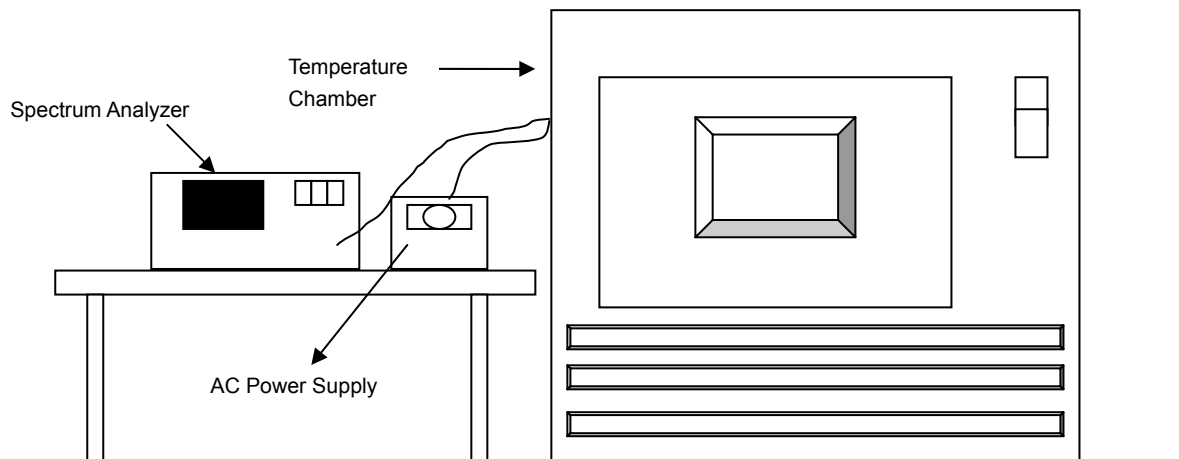


## 4.5 Frequency Stability

### 4.5.1 Limits of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation

### 4.5.2 Test Setup



### 4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.5.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

### 4.5.5 Deviation from Test Standard

No deviation.

### 4.5.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

#### 4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5179.9831	-0.00033	5179.9857	-0.00028	5179.9831	-0.00033	5179.9845	-0.00030
40	120	5179.9870	-0.00025	5179.9837	-0.00031	5179.9828	-0.00033	5179.9866	-0.00026
30	120	5179.9893	-0.00021	5179.9867	-0.00026	5179.9914	-0.00017	5179.9877	-0.00024
20	120	5180.0146	0.00028	5180.0169	0.00033	5180.0156	0.00030	5180.0154	0.00030
10	120	5180.0042	0.00008	5180.0059	0.00011	5180.0087	0.00017	5180.0061	0.00012
0	120	5180.0027	0.00005	5180.0021	0.00004	5180.0003	0.00001	5180.0006	0.00001
-10	120	5179.9894	-0.00020	5179.9868	-0.00025	5179.9886	-0.00022	5179.9870	-0.00025
-20	120	5180.0007	0.00001	5179.9997	-0.00001	5180.0015	0.00003	5180.0024	0.00005
-30	120	5179.9762	-0.00046	5179.9793	-0.00040	5179.9778	-0.00043	5179.9782	-0.00042

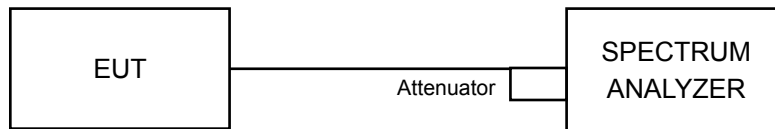
Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5180.0150	0.00029	5180.0179	0.00035	5180.0160	0.00031	5180.0160	0.00031
	120	5180.0146	0.00028	5180.0169	0.00033	5180.0156	0.00030	5180.0154	0.00030
	102	5180.0146	0.00028	5180.0175	0.00034	5180.0148	0.00029	5180.0156	0.00030

## 4.6 6dB Bandwidth Measurement

### 4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

### 4.6.2 Test Setup



### 4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.6.4 Test Procedure

#### MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

### 4.6.5 Deviation from Test Standard

No deviation.

### 4.6.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

#### 4.6.7 Test Results

##### 802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.41	16.40	0.5	Pass
157	5785	16.39	16.42	0.5	Pass
165	5825	16.40	16.43	0.5	Pass

##### 802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.66	17.66	0.5	Pass
157	5785	17.64	17.66	0.5	Pass
165	5825	17.63	17.65	0.5	Pass

##### 802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.46	36.19	0.5	Pass
159	5795	36.43	36.43	0.5	Pass

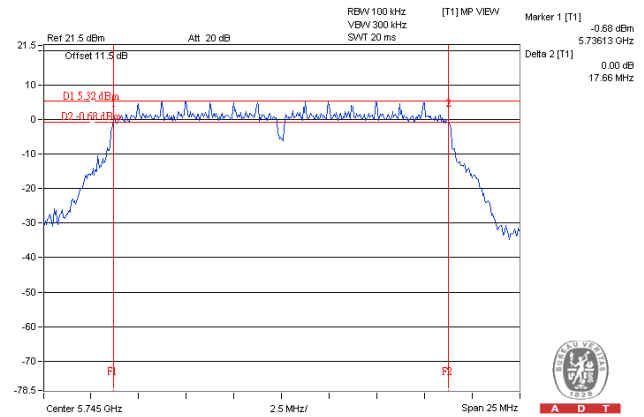
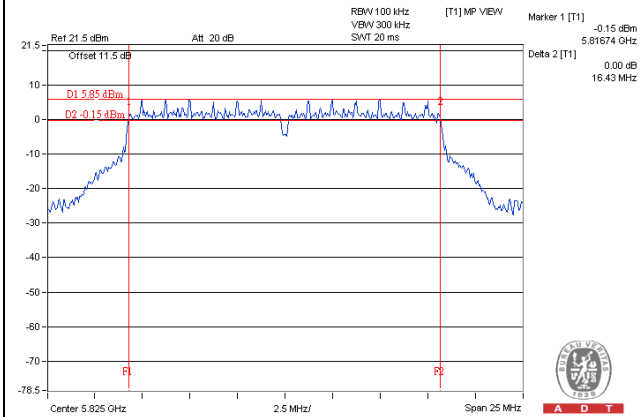
##### 802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	76.07	75.96	0.5	Pass

**Spectrum Plot of Worst Value**

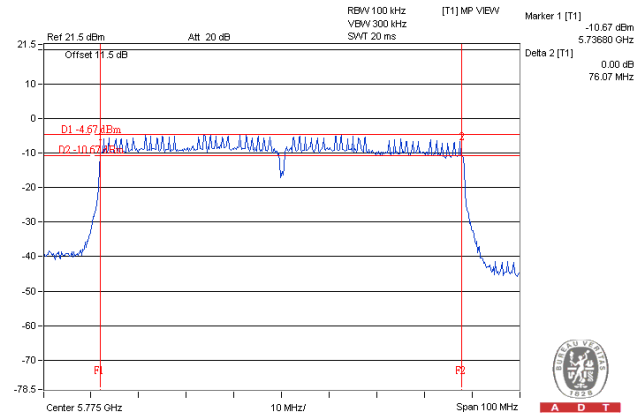
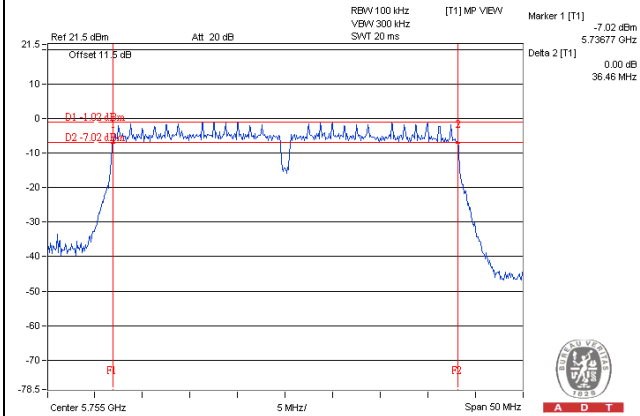
**802.11a**

**802.11n (HT20)**



**802.11n (HT40)**

**802.11ac (VHT80)**



## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

## Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.

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